Supporting Information For

Biomolecule-assisted hydrothermal synthesis of In$_2$S$_3$ porous films and enhanced photocatalytic properties

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Fig. S1 XRD pattern for the film obtained by hydrothermal treatment at 160 °C for 12 h without adding GSH, showing the diffraction peaks of In(OH)$_3$. The unlabeled peaks may be attributed to the ITO substrates and other compounds existing in the film.

Fig. S2 UV-Vis absorption spectra of the In$_2$S$_3$ porous films obtained at different reaction times.
**Fig. S3** SEM images illustrating the morphology of the In$_2$S$_3$ dense film (~1 μm) synthesized by chemical bath deposition method using In(NO$_3$)$_3$ and thioacetamide as precursors: (a) Top view; (b) Cross-section view.

**Fig. S4** SEM image of the In$_2$S$_3$ porous film after photocatalytic test (Under UV radiation for 2h).